

Appendix D

Cost and Summary of Environmental Effects of Alignment Options



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Table D-1. Cost and environmental effects of the Beartooth Ravine Options.

Attribute or Resource	40 km/h Option (Existing Alignment)		55 km/h Option (Option A)		60 km/h Option (Option B)	
Cost (\$)[†]	6,323,000		10,445,00		10,931,00	
Disturbance	ha	ac.	ha	ac.	ha	ac.
Total disturbed area	2.7	6.7	2.6	6.5	2.6	6.5
Existing disturbed area (road, etc.) w/in construction limits	0.8	2.0	0.6	1.5	0.5	1.3
New disturbed area	1.9	4.7	1.8	5.0	1.8	4.2
Abandoned road segments	0.0	0.0	0.2	0.5	0.3	0.7
Wetlands and Waters of the U.S.						
Wetlands	<0.1	0.1	<0.1	0.1	<0.1	0.1
Fens	0.0	0.0	0.0	0.0	0.0	0.0
Other waters of the U.S.	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vegetation						
Alpine meadow	0.0	0.0	0.0	0.0	0.0	0.0
Mountain meadow	0.1	0.2	0.1	0.3	0.1	0.3
Wet meadow	0.1	0.1	0.1	0.1	0.1	0.1
Forest	1.5	3.8	1.6	3.8	1.5	3.8
Rock outcrop/talus	0.2	0.5	0.2	0.6	0.3	0.8
Total	1.9	4.6	2.0	4.8	2.0	5.0
Old growth forest	1.5	3.8	1.6	3.8	1.5	3.8
Whitebark pine habitat	1.5	3.8	1.6	3.8	1.5	3.8

[†]Costs and effects shown are for the 9.6-m (32-ft.) option.

Table D-2. Cost and environmental effects of the Top of the World Store Options.

Attribute or Resource	Existing Alignment		Option A		Option B	
Cost (\$)[†]	5,886,000		4,069,000		5,053,000	
Disturbance	ha	ac.	ha	ac.	ha	ac.
Total disturbed area	9.0	22.2	11.9	29.4	12.4	30.8
Existing disturbed area (road, etc.) w/in construction limits	2.9	7.1	1.2	2.9	0.8	2.0
New disturbed area	5.8	14.3	8.7	21.5	9.2	22.8
Abandoned road segments	0.3	0.8	2.0	5.0	2.4	6.0
Wetlands and Waters of the U.S.						
Wetlands	1.1	2.8	0.7	1.8	1.1	2.6
Fens	0.0	0.0	0.0	0.0	0.0	0.0
Other waters of the U.S.	<0.1	<0.1	<0.1	<0.1	0.0	<0.1
Total	1.2	2.9	0.8	1.9	1.1	2.7
Vegetation						
Alpine meadow	0.0	0.0	0.0	0.0	0.0	0.0
Mountain meadow	3.6	8.8	5.8	14.3	4.2	10.5
Wet meadow	1.3	3.1	0.8	2.0	1.2	2.9
Forest	0.9	2.3	2.1	5.1	3.8	9.4
Rock outcrop/talus	0.0	0.0	<0.1	<0.1	<0.1	<0.1
Total	5.8	14.2	8.8	21.5	9.3	22.9
Old growth forest	0.9	2.3	2.1	5.1	3.8	9.4
Whitebark pine habitat	0.9	2.3	2.1	5.1	3.8	9.4

[†]Costs and effects shown are for the 9.6-m (32-ft.) option.

Table D-3. Cost and environmental effects of the Little Bear Lake Fen Options.

Attribute or Resource	Wall Option		Bridge Option	
Cost (\$)[†]	2,145,000		3,550,000	
Disturbance				
Total disturbed area	3.2	7.9	3.3	8.1
Existing disturbed area (road, etc.) w/in construction limits	0.9	2.3	0.8	2.0
New disturbed area	2.2	5.5	2.3	5.8
Abandoned road segments	0.0	0.0	0.1	0.3
Wetlands and Waters of the U.S.				
Wetlands	<0.1	<0.1	<0.1	<0.1
Fens	0.0	0.0	0.0	0.0
Other waters of the U.S.	0.0	0.0	0.0	0.0
Total	<0.1	<0.1	<0.1	<0.1
Vegetation				
Alpine meadow	0.0	0.0	0.0	0.0
Mountain meadow	0.9	2.3	1.1	2.8
Wet meadow	<0.1	0.2	<0.1	0.1
Forest	1.1	2.7	1.0	2.5
Rock outcrop/talus	0.1	0.3	0.1	0.3
Total	2.2	5.5	2.2	5.7
Old growth forest	1.1	2.7	1.0	2.5
Whitebark pine habitat	1.1	2.7	1.0	2.5

[†]Costs and effects shown are for the 9.6-m (32-ft.) option.

Table D-4. Cost and environmental effects of the Frozen Lake Options.

Attribute or Resource	40 km/h Option (Existing Alignment)		50 km/h Option (Option A)	
Cost (\$)[†]	2,609,000		2,897,000	
Disturbance	ha	ac.	ha	ac.
Total disturbed area	5.5	13.5	6.0	14.9
Existing disturbed area (road, etc.) w/in construction limits	1.7	4.2	1.5	3.7
New disturbed area	3.8	9.3	4.3	10.7
Abandoned road segments	0.0	0.0	0.2	0.5
Wetlands and Waters of the U.S.				
Wetlands	<0.1	0.1	0.1	0.3
Fens	0.0	0.0	0.0	0.0
Other waters of the U.S.	<0.1	<0.1	<0.1	<0.1
Total	<0.2	<0.2	<0.2	<0.4
Vegetation				
Alpine meadow	1.1	2.7	1.2	3.1
Mountain meadow	0.9	2.3	1.1	2.8
Wet meadow	0.1	0.2	0.2	0.5
Forest	0.2	0.6	0.3	0.7
Rock outcrop/talus	1.3	3.2	1.4	3.5
Total	3.6	9.0	4.2	10.6
Old growth forest	0.2	0.6	0.3	0.7
Whitebark pine habitat	0.2	0.6	0.3	0.7

[†]Costs and effects shown are for the 9.6-m (32-ft.) option.

Table D-5. Cost and environmental effects of the Bar Drift Options.

Attribute or Resource	Existing Alignment		Option A	
Cost (\$)[†]	1,783,000		1,249,000	
Disturbance	ha	ac.	ha	ac.
Total disturbed area	6.3	15.6	4.8	11.9
Existing disturbed area (road, etc.) w/in construction limits	1.5	3.8	0.8	2.0
New disturbed area	4.8	11.8	3.3	8.0
Abandoned road segments	0	0	0.8	1.9
Wetlands and Waters of the U.S.				
Wetlands	<0.1	0.2	<0.1	0.1
Fens	0.0	0.0	0.0	0.0
Other waters of the U.S.	0.0	0.0	0.0	0.0
Total	<0.1	0.2	<0.1	0.1
Vegetation				
Alpine meadow	4.1	10.2	2.9	7.2
Mountain meadow	0.0	0.0	0.0	0.0
Wet meadow	0.1	0.2	0.1	0.1
Forest	0.0	0.0	0.0	0.0
Rock outcrop/talus	0.6	1.4	0.3	0.7
Total	4.8	11.8	3.3	8.0
Old growth forest	0.0	0.0	0.0	0.0
Whitebark pine habitat	0.0	0.0	0.0	0.0

[†]Costs and effects shown are for the 9.6-m (32-ft.) option.

Table D-6. Cost and environmental effects of the Albright Curve Options.

Attribute or Resource	30 km/h Option (Existing Alignment)		40 km/h Option (Option A)		50 km/h Option (Option B)	
Cost (\$)[†]	1,443,000		1,595,000		1,386,000	
Disturbance	ha	ac.	ha	ac.	ha	ac.
Total disturbed area	4.6	12.4	5.0	12.4	4.8	11.8
Existing disturbed area (road, etc.) w/in construction limits	1.6	4.0	1.6	4.0	0.7	1.7
New disturbed area	2.8	7.0	3.4	8.4	3.1	7.5
Abandoned road segments	0.2	0.4	0.8	2.1	1.1	2.6
Wetlands and Waters of the U.S.						
Wetlands	<0.1	0.2	0.2	0.6	0.1	0.3
Fens	0.0	0.0	0.0	0.0	<0.1	<0.1
Other waters of the U.S.	0.0	0.0	0.0	0.0	0.0	0.0
Total	<0.1	0.2	0.2	0.6	<0.2	<0.4
Vegetation						
Alpine meadow	2.7	6.8	3.2	7.9	2.9	7.1
Mountain meadow	0.0	0.0	0.0	0.0	0.0	0.0
Wet meadow	0.1	0.2	0.2	0.4	0.1	0.3
Forest	0.0	0.0	0.0	0.0	0.0	0.0
Rock outcrop/talus	0.1	0.1	0.0	0.0	0.1	0.1
Total	2.9	7.1	3.4	8.4	3.1	7.5
Old growth forest	0.0	0.0	0.0	0.0	0.0	0.0
Whitebark pine habitat	0.0	0.0	0.0	0.0	0.0	0.0

[†]Costs and effects shown are for the 9.6-m (32-ft.) option.